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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 09/836,927 | 04/17/2001 | Nedim Fresko | SUN1P803/P5258 | 9043 |
| 22434 | 7590 | 04/21/2004 | EXAMINER | |
| BEYER WEAVER & THOMAS LLP P.O. BOX 778 BERKELEY, CA 94704-0778 | | | BANANKHAAH, MAJID A | |
| | | ART UNIT | | PAPER NUMBER |
| | | 2127 | | 4 |
| ~ DATE MAILED: 04/21/2004 | | | | |

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. 09/836,927 | Applicant(s) FRESKO ET AL. |
|------------------------------|-------------------------------|-------------------------------|
| | Examiner | Art Unit |
| | Majid A Banankhah | 2127 |

– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 17 April 2001.

2a) This action is **FINAL**. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-4 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 1-4 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)
2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
 Paper No(s)/Mail Date 2.
4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date. ____.
5) Notice of Informal Patent Application (PTO-152)
6) Other: ____.

DETAILED ACTION

1. This office action is in response to application filed on April 17, 2001. Claims 1-4 are considered for examination.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nilsen (U.S. Pat. No. 6081665).

Nilsen et al teaches:

A computer-implemented interface for reclaiming memory in a multi-threaded virtual machine environment, the multi-threaded virtual machine environment including a virtual machine (the patent of Nilsen, See Abstract, col. 1, lines 17-41, col. 3, line 65-68 to col. 4, line 2), the computer-implemented interface comprising:

a first module, the first module being associated with the virtual machine, the first module including a first routine for initiating a garbage collection process within the virtual machine environment (col. 14, 27-39, When a method is invoked through an interface declaration in initiating, Additionally without which there will not be any garbage collection process),

a second routine for scanning roots associated with the virtual machine environment (col. 50, line 45 to col. 51, line 62, specifically, 3(a, and b) lines root scan),

a third routine for following roots through objects associated with the virtual machine environment (col.), lines 6-10, and col. 51, lines 18-23, root pointer);

the second module being arranged to interface with the first module, the second module including a fourth routine for initializing a heap in the virtual machine environment (col. 20, lines 14-20, access to heap),

a fifth routine for allocating an object in the virtual machine environment (col. 4, lines 8-11),

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and a sixth routine for performing the garbage collection process (col. 49, lines 14-26, programmers can specify an action to perform garbage collection).

The reference of Nilsen while teaches of the 6 necessary routines for garbage collection purpose, fails to teach of separating routines into different modules. However, it is well known in the art to separate routines into different modules in order to manage the routines and increase efficiency. Therefore, it would have been obvious for one ordinary skill in the art at the time the invention was made to separate different routines in separate modules for management purposes.

Per claims 2-3, the claim is rejected for the reason stated in the rejection of claim 1, and wherein the second module further includes at least a seventh routine for implementing barriers for the garbage collection process is taught by Nilsen teaches of read and write barrier in col. 50, lines 7-33.

Per claim 4, wherein the first module includes a seventh routine for handling particular objects associated with the virtual machine environment (Fig. 28, Macro specialized for the Virtual machine environment, see col. 8, lines 24-26).

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Majid A. Banankhah** whose voice telephone number is (703) 308-6903. A voice mail service is also available at this number.

All response sent to U.S. Mail should be mailed to:

Commissioner of Patent and Trademarks
Washington, D.C. 20231

Hand-delivered responses should be brought to Crystal Park Two, 2021 Crystal Drive, Arlington, VA, Six Floor (Receptionist). All hand-delivered responses will be handled and entered by the docketing personnel. Please do not hand deliver responses to the Examiner.

All Formal or Official Faxes must be signed and sent to either (703) 308-9051 or (703) 308-9052. Official faxes will be handled and entered by the docketing personnel. The date of entry will correspond to the actual FAX reception date unless that date is a Saturday, Sunday, or a Federal Holiday within the District of Columbia, in which case the official date of receipt will be the next business day. The application file will be promptly forwarded to the Examiner unless the application file must be sent to another area of the office, e.g., Finance Division for fee charging, etc.

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Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-9600.

Majid Banankhah

4/19/04

MAJID BANANKHAH
PRIMARY EXAMINER
